

Amendments to the Specification

Please insert the following new paragraph on page 1 before line 5.

This application is a division of Application No. 09/970,916 filed October 5, 2001, which is a division of Application No. 08/768,579 filed December 18, 1996, now U.S. Patent No. 6,327,051 issued December 4, 2001.

The paragraph starting at page 7, line 26 has been amended as follows.

Further, in a printing control apparatus which manages the amount of remaining ink, a check is performed at the time of ink cartridge replacement to determine whether the cartridges before and after replacement are the same. If the cartridges are the same, the amount of remaining ink is reset and management of the amount of remaining ink is started anew. This makes is possible to ~~management~~ manage the amount of remaining ink correctly.

The paragraph starting at page 12, line 20 has been amended as follows.

Fig. 45 is a diagram showing the manner in which a plurality of printers are interconnected;

The paragraph starting at page 22, line 4 has been amended as follows.

In order to implement the functions of the printing control apparatus 10, the program of a procedure shown in Fig. 9 is executed by the CPU 102 of the host computer 100 configured as described above. The procedure of Fig. 9 has already been described with reference to Fig. 1, but will now be described again with reference to Fig. 9.

The paragraph starting at page 34, line 3 has been amended as follows.

When this program is executed, settable items and settable values of the kind shown in Table 1 and default settings of the kind shown in Table 2 will have already been stored in the secondary memory 104 or RAM 103. Further, if, in a case where a certain item has been set to a specific value, there are items that are restricted by this value and are capable of taking on only specific values, default settings of these items in which the values of the items ~~serves as~~ serve as indices will have been stored in the memory 104 or RAM 103. At readout these default settings are read out in the format of Table 4.

The paragraph starting at page 34, line 17 has been amended as follows.

First, the setting information of the kind shown in Table 1 is read out of the secondary memory 104 at step S1501 in Fig. 15, then the items capable of being set and the values which these items can take on are displayed at step S1502. This ~~if~~ is followed by reading out the default information of Table 2 (step S1503), storing the default values in the RAM 103 as the current settings and displaying these values in highlighted form in the

manner shown in Fig. 13 (step S1504). If the default settings have been displayed in this fashion, the system waits for an input from the operator (step S1505).

The paragraph starting at page 35, line 1 has been amended as follows.

If the operator makes an input, the CPU 102 determines what kind of input this is (step S1506). If the cancel button is pressed, printing processing remains suspended. If the select button is pressed, the CPU judges that the highlighted settings of the selection items have been selected and sends the current settings to the printing device (step S1507). The printing device thenceforth ~~received~~ receives printing data and executes printing.

The paragraph starting at page 43, line 25 has been amended as follows.

Fig. 20 shows a window referred to as a “main property” window. The user is capable of employing this window to set an “Automatic Pallet” section through which the operator may select a printing method that is suited to the user’s own application software. Furthermore, the window illustrates messages regarding positions to which “Paper Thickness Selection Lever” and “Paper Thickness Lever” are to be moved in dependent upon thickness of the printing paper and settings of “Media Type” and “Paper Feed Method.” The default settings for each of the items are as follows: “Word Processor” is selected on the automatic pallet, “Inward” for “Paper Thickness Selection

Lever”, “Center” for “Paper Thickness Lever”, “Plain Paper” for “Media” and “Automatic Sheet Feeder” for “Paper Feed Method.” These are displayed on the display unit.

The paragraph starting at page 47, line 3 has been amended as follows.

In Fig. 24, “Outward” has been set for “Paper Thickness Selection Lever”, “Center” for “Paper Selection Lever”, “High-gloss Film” for “Media” and “Manual Insertion” for “Paper Feed Method.” More specifically, the user is has, in effect, sent a message meaning “move the Paper Thickness selection lever of the printer outward, move the paper selection lever toward the center, use high-gloss film as the medium placed in the printer and insert the film manually.” Thus, the user is instructed of the operation necessary to perform printing in the manner desired by the user. If the user performs the operation specified for the printer driver and executes printing, it will be possible to obtain printed results suitable for photographic film.

The paragraph starting at page 47, line 16 has been amended as follows.

If the user is not satisfied with the photographic film setting on the “Automatic Pallet” and wishes to make a more detailed setting, then the user clicks the “Detailed Setting” button in the main property window. This causes the quality property window of Fig. 25 to open. The user can use this screen to make detailed settings such as

by changing the media or dither processing and opening the color setting property window of ~~Fig. 26~~ Fig. 26 to adjust density or set color balance.

The paragraph starting at page 50, line 3 has been amended as follows.

In a case where the user executes printing using coated paper instead of high-gloss film and making the “Photographic Film” setting in the “Automatic Pallet” field, the setting of the item “Media” is changed from “High-gloss Film” to “Coated Film”, as shown in Fig. 27. When this is done, the setting selection unit 302 sends the link information extraction unit 307 the information request instruction 329, which includes information to the effect that the setting of the item “Media” has been changed from “High-gloss Film” to “Coated Paper.” The link information extraction unit 307 sends the link information storage unit 308 the link information request instruction 330. Upon receiving the instruction 330, the link information storage unit 308 sends information, which includes the setting of an item to be changed attendant upon the change of the setting for the item “Media” from ~~High-gloss~~ “High-gloss Film” to “Coated Paper”, to the link information extraction unit 307 as the link information 331. This information is delivered from the link information extraction unit 307 to the setting selection unit 302 as link information 322. The setting selection unit 302 compares the latest set value stored in the storage area 3021 with the link information 332. If the setting stored in the storage area 3021 and the setting of the link information 332 differ and, moreover, neither can be decided upon, the user is called upon to make the decision, as shown in Fig. 28. In a case

where the user has decided that a change should be made to the link information, the user clicks on the "OK" button in Fig. 28. In response to this operation, the link information 332 is stored on the recording medium as the latest information. The display unit displays the latest information in the manner shown in Fig. 29. Here the setting for the item "Paper Feed Method" has been changed from "Manual Insertion" to "Automatic Sheet Feeder." In a case where the user decides that the preceding setting is acceptable in Fig. 28, the user clicks on the "Cancel" button in Fig. 28. In response, the information that has been stored in the storage area 3021 is displayed by the display unit 309 in the manner shown in Fig. 30. In the window shown in Fig. 30, the only change made by the operator from the window of Fig. 25 is the settable item "Media", which the operator has changed to ~~High-gloss Film~~ "Coated Paper."

The paragraph starting at page 58, line 26 has been amended as follows.

As shown in Fig. 33, a controller H01 (referred to as a "CPU" below) administers overall control of the embodiment. A keyboard H02 and a pointing device H21 are used when the operator enters various data. A color display unit H03 displays image data that ~~have~~ has been stored in a RAM H05. A ROM H04 is a read-only memory in which the control procedure for controlling the overall apparatus and various other items of necessary information are stored in advance. A RAM H05 is a random-access memory utilized as a working area. A hard disk H06 is for reading and writing various data and for storing programs. A printer interface H07 is a bidirectional interface for transmitting

printing data and for receiving signals representing the status of a printer H08. A data bus H09 is used to transfer various data. It should be noted that the hard disk H06 stores application programs and a printer driver. These are loaded in the RAM H05 and are executed by the CPU H01.

The paragraph starting at page 59, line 17 has been amended as follows.

The printer H08 of this embodiment is a color inkjet printer and is capable of being equipped with three types of interchangeable heads. The first is a monochrome printing head, the second, a color printing head and the third, a photographic grade printing head. The monochrome and color printing heads are bi-level heads, the same as those in conventional printers. One bit of image data in a print command signifies one dot. The photographic grade printing head is capable of performing grayscale printing by superimposing light inks. In this embodiment, the head is capable of printing four gray levels. This means that two bits are necessary to express one dot. Since the number of bits needed to print one dot thus differs depending upon the head, printing cannot be performed correctly unless a print command suited to the head installed in the printer is transmitted.

The paragraph starting at page 68, line 17 has been amended as follows.

The operation of the printer driver will be described in terms of the display screen. Fig. 47 shows a printing dialog box. This dialog box is a window for making

various ~~setting~~ settings relating to printing and executing printing. A “Cartridge” menu in Fig. 47 is for selecting the head. Three types of heads are available for the printer in this printing system. The first is a monochrome printing head, the second, a color printing head and the third, a photographic grade printing head. The printer drive generates a print command in conformity with the setting on the “Cartridge” menu when a “Print” button is pressed. The head that has been installed in the printer is checked before the print command is transmitted to the printer. If the installed head agrees with the menu setting, then the print command is transmitted. If non-agreement is found, an error dialog box shown in Fig. 48 is displayed. If the “Stop” button in this dialog box is pressed, printing is suspended. If “OK” is selected, a print command is generated in conformity with the head that has been installed in the printer.

The paragraph starting at page 71, line 18 has been amended as follows.

The operation of the printer driver will be described first in terms of the display screen. Fig. 50 illustrates the printing dialog box. A “Cartridge” menu in Fig. 50 is for selecting the head. Three types of heads are available for the printer in this printing system. The first is a monochrome printing head, the second, a color printing head and the third, a photographic grade printing head. Figs. 51 through 53 show “Cartridge” menus. Figs. 51, 52 and 53 are menus displayed when the color printing head, monochrome printing head and photographic grade printing head, respectively, have been loaded in the

in the printer. The printer driver changes the menu automatically in conformity with the head that has been installed.

The paragraph starting at page 76, line 17 has been amended as follows.

In order to determine whether the type of cartridge after the replacement is the same as that before the replacement, the cartridge type acquired at step S431 and the type acquired at step S435 are compared at step S436. If the cartridge type is different, then cartridge replacement processing is ended. Next, at step S437, the screen of Fig. 60 is displayed and the operator is allowed to select whether resetting of the amount of remaining ink is to be performed. If the operator does not reset the amount of remaining in ink, then cartridge replacement processing is terminated.

The paragraph starting at page 77, line 21 has been amended as follows.

Though resetting of the amount of remaining ink is performed from the printer driver in the foregoing embodiment, it goes without saying that the same effects can be obtained even if this is performed using the firmware of the printer per se.

The paragraph starting at page 82, line 14 has been amended as follows.

Since it is so arranged that default settings are made, the user need not make many settings related to printing information in the case of ordinary printing. ~~The~~ This reduces the burden upon the user.